can also be supplied by microwaves. The microwave frequencies are preferably in the gigahertz (GHz) range.

In the claims:

1. (Three times amended) A process for surface treatment of at least one electrically conducting substrate or a substrate that has been coated so as to be electrically conducting, the process comprising the steps of:

placing a gas in a region of an electric discharge;

restricting the discharge region on at least two opposite sides by surfaces to be treated, wherein the substrate surfaces are supplied by at least one substrate and form a hollow cathode used to enable a hollow-cathode glow discharge; and

treating the substrate surfaces by a hollow-cathode glow discharge, said discharge activated only by at least one of a DC voltage, a pulsed DC voltage, and an AC voltage having a frequency of up to 50 MHz.

Please cancel claim 3 without prejudice.

4. (Three times amended) The process according to claim 1 wherein the at least one substrate is band-shaped.

5. (Three times amended) The process according to claim 4 further comprising the step of:

turning the at least one substrate at least once to change the direction of movement;

wherein the discharge region is restricted on at least one side by an area of the substrate before the turn in the direction of movement, and on at least one other side by an area of the substrate after the turn in the direction of movement.

6. (Three times amended) The process according to claim 1 wherein the restricting step further comprises the step of restricting the discharge region on two sides by substrate surfaces at a distance of one mm to 50 cm apart.

8. (Three times amended) The process according to claim 1 wherein the at least one substrate is grounded.

9. (Three times amended) The process according to claim 1 wherein a magnitude of a voltage applied between the at least one substrate and a plasma formed by said electric discharge is between one and 3000 volts.

12. (Three times amended) The process according to claim 1 wherein the placing step further comprises the step of feeding the gas into one of the discharge region and an area immediately outside the discharge region.

13. (Three times amended) The process according to claim 1 further comprising the step of removing the gas from one of the discharge region and an area immediately outside the discharge region.

14. (Three times amended) A device for surface treatment of at least one electrically conducting substrate or a substrate that has been coated so as to be electrically conducting, the device comprising:

a discharge region enclosed on at least two sides by substrate surfaces of at least one substrate;

means for supplying electrical energy to the discharge region;

a vacuum chamber to enclose the discharge region;

means for supplying gas to the vacuum chamber;

means for removing gas from the vacuum chamber; and

an anode placed proximate to the at least one substrate and is operable to receive an activating voltage;

wherein the substrate surfaces form a hollow cathode used to enable a hollow-cathode glow discharge, and wherein the at least one substrate is surface treated by the hollow-cathode glow discharge, said discharge activated by the activating voltage, the activating voltage only at least one of a DC voltage, a pulsed DC voltage, and an AC voltage having a frequency of up to 50 MHz.

15. (Twice amended) The device according to claim 14 further comprising means for cooling the at least one substrate.

16. (Three times amended) The device according to claim 14 further comprising a gas supply arranged in one of the discharge region and immediately outside the discharge region.

17. (Three times amended) The device according to claim 14 further comprising means for gas removal arranged in one of the discharge region and immediately outside the discharge region.

18. (Three times amended) The device according to claim 14 wherein the at least one substrate is a continuously running band adapted to be unwound from a first spool and adapted to be wound onto a second spool.

21. (Three times amended) The device according to claim 14 further comprising deflection elements arranged in the vacuum chamber, in the region of the sides of the discharge region not restricted by the substrate surfaces, wherein the deflection elements are electrically isolated from the at least one substrate.

22. (Three times amended) The device according to claim 14 further comprising deflection elements arranged in the vacuum chamber near one of the device components in which parasitic discharges could be formed due to their potentials and the at least one substrate and the discharge region, and wherein the deflection elements are electrically isolated from the device components and the at least one substrate.

23. (Amended) A process for surface treatment of a substrate, the substrate one of an electrically conducting substrate and a substrate coated so as to be electrically conducting, the process comprising the steps of:

placing a gas in a region of an electric discharge;

restricting the discharge region on at least two sides by substrate surfaces to be treated, wherein the substrate surfaces form a hollow cathode; and

treating the substrate surfaces by a hollow-cathode glow discharge, said discharge activated by at least one of a DC voltage, a pulsed DC voltage, an AC voltage and microwaves; and wherein

elements of the surface treatment process are integrated outside of the discharge region, the elements including means for placing the gas in the region, means for removing the gas from the region, and means for activating said discharge.

24. (Amended) A device for surface treatment of a substrate, the substrate one of an electrically conducting substrate and a substrate coated so as to be electrically conducting, the device comprising:

at least one substrate defining a discharge region enclosed on at least two sides by substrate surfaces to be treated;

means for supplying electrical energy to the discharge region;

a vacuum chamber to enclose the discharge region;

means for supplying gas to the vacuum chamber;

means for removing gas from the vacuum chamber; and

an anode proximate to the at least one substrate;

wherein the substrate surfaces form a hollow cathode, and wherein the substrate surfaces are treated by a hollow-cathode glow discharge activated by at least one of a DC voltage, a pulsed DC voltage, an AC voltage and microwaves; and

wherein elements of said device are integrated outside of the discharge region, the elements including the means for supplying electrical energy, the means for supplying gas, the means for removing gas and the anode.

25. (New) The process according to claim 1 wherein the restricting step further comprises the step of restricting the discharge region on two sides by substrate surfaces at a distance of one to ten centimeters apart.

26. (New) The process according to claim 1 wherein the hollow-cathode glow discharge is activated by one of a DC voltage, a pulsed DC voltage with a pulse frequency between ten kHz and 100 kHz, an AC voltage having a frequency between 50 Hz and 60 Hz, an AC voltage having a frequency between ten kHz and 100 kHz and an AC voltage having a frequency between one MHz and 50 MHz.

27. (New) The process according to claim 1 wherein the at least one substrate comprises at least one band-shaped substrate and wherein the restricting step further comprises restricting the discharge region on two opposed, parallel sides by the at least one band-shaped substrate.

28. (New) The device according to claim 14 wherein a distance between the substrate surfaces is between one and ten centimeters.

29. (New) The device according to claim 14 wherein the activating voltage is one of a DC voltage, a pulsed DC voltage with a pulse frequency between ten kHz and 100 kHz, an AC voltage having a frequency between 50 Hz and 60 Hz, an AC voltage having a frequency

between ten kHz and 100 kHz and an AC voltage having a frequency between one MHz and 50 MHz.

30. (New) The device according to claim 14 wherein the at least one substrate is at least one band-shaped substrate and wherein the discharge region is enclosed by two opposed, parallel sides by the at least one band-shaped substrate.

31. (New) The device according to claim 30 further comprising at least one roller located outside the discharge region and supporting the at least one band-shaped substrate.

32. (New) The process according to claim 23 further comprising the step of:

providing the substrate surfaces using at least one band-shaped substrate; and wherein the restricting step further comprises restricting the discharge region on two opposed, parallel sides by the at least one band-shaped substrate.

33. (New) The process according to claim 33 wherein the elements further comprise at least one roller located outside the discharge region and supporting the at least one band-shaped substrate.

34. (New) The device according to claim 24 wherein the activating voltage is one of a DC voltage, a pulsed DC voltage with a pulse frequency between ten kHz and 100 kHz, an AC voltage having a frequency between 50 Hz and 60 Hz, an AC voltage having a frequency between ten kHz and 100 kHz and an AC voltage having a frequency between one MHz and 50 MHz.

35. (New) The device according to claim 24 wherein the at least one substrate is at least one band-shaped substrate and wherein the discharge region is enclosed by two opposed, parallel sides by the at least one band-shaped substrate.

36. (New) The device according to claim 35 further comprising at least one roller located outside the discharge region and supporting the at least one band-shaped substrate.